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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,927	11/13/2003	Hung-Chih Wu	3313-1058P	6570

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EXAMINER	
BARNES, CRYSTAL J	
ART UNIT	**PAPER NUMBER**
2121	

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/705,927	WU, HUNG-CHIH	
	Examiner	Art Unit	
	Crystal J. Barnes	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6 and 8* is/are rejected.

7)☒ Claim(s) *3,5,7 and 9-11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 November 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The following is an initial Office Action upon examination of the above-identified application on the merits. Claims 1-11 are pending in this application.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: reference number 46A in figure 7. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be

labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:

- reference character "45B" has been used to designate both multiplexer and de-multiplexer on page 9 line 3
- reference character "46B" has been used to designate both multiplexer in figure 7 and de-multiplexer on page 9 line 3
- reference character "54" has been used to designate both multiplexer in figure 7 and on page 9 line 10 and de-multiplexer on page 9 line 18
- reference character "57" has been used to designate both de-multiplexer in figure 8 and multiplexer on page 9 lines 21, 22
- reference character "58" has been used to designate both multiplexer in figure 8 and de-multiplexer on page 9 lines 21, 22

- the terms "multiplexer" and "de-multiplexer" have been misspelled throughout the specification

Appropriate correction is required.

Claim Objections

5. Claims 9 and 11 are objected to because of the following informalities: the terms "multiplexer" and "de-multiplexer" have been misspelled in claims 9 and 11. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 3 recites the limitation "the basic command executing module" in line 1. There is insufficient antecedent basis for this limitation in the claim. Claim 2 recites "a basic command executing module".

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1, 2, 4, 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5,390,350 to Chung et al.

As per claim 1, the Chung et al. reference discloses a programmable logic controller (PLC), comprising: a first processing unit (see column 7 lines 63-67, "system controller, CPU 12, CPU 14"), which executes low-speed pulse outputs (see column 8 line 65, "clock pulse ... at a low speed"), low-speed counting (see column 8 lines 39-48, "several frequencies") and first group commands (see column 8 lines 55-56, "minimize CPU power consumption"); and a second processing unit ("system controller, CPU 12, CPU 14"), which takes an interrupt signal (see column 8 lines 66,

"interrupts") generated by the first processing unit ("system controller, CPU 12, CPU 14") to execute a corresponding high-speed pulse output (see column 8 lines 67, "clock pulses to high speed"), high-speed counting (see column 8 lines 39-48, "several frequencies"), and a second group command (see column 8 lines 57-61, "high processing activity, data transfer").

As per claim 2, the Chung et al. reference discloses the second processing unit ("system controller, CPU 12, CPU 14") includes a basic command executing command (see column 12-13 lines 65-5, "CPUCLK control register 242") for executing the second group command ("high processing activity, data transfer").

As per claim 4, the Chung et al. reference discloses the second processing unit ("system controller, CPU 12, CPU 14") includes a pulse output module (see column 11 lines 31-34, "oscillator 86, 28a") for output a plurality of high-speed pulse signals (see column 11 lines 41-49, "clock pulse string").

As per claim 6, the Chung et al. reference discloses the second processing unit ("system controller, CPU 12, CPU 14") contains an interrupt module (see column 9 lines 10-16, "interrupt requests lines") for outputting interrupt signals ("interrupt signal").

As per claim 8, the Chung et al. reference discloses the second processing unit ("system controller, CPU 12, CPU 14") contains a counting module (see column 11 lines 34-37, "CPUCLK 34") for executing a plurality of high-speed counting modes (see column 8 lines 57-61, "high activity").

11. Claims 1, 2, 4, 6 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pub. No. 2002/0095609 A1 to Tokunaga.

As per claim 1, the Tokunaga reference discloses a programmable logic controller (PLC), comprising: a first processing unit (see page 2 [0039], "low speed processor 4"), which executes low-speed pulse outputs ("clock signal"), low-speed counting ("frequency of clock signal") and first group commands (see page 3 [0046], "application program"); and a second processing unit (see page 2 [0038], "high speed processor 1"), which takes an interrupt signal (see page 3 [0050], "interruption signal") generated by the first processing unit ("low speed processor 4") to execute a corresponding high-speed pulse output (see page 2 [0040], "clock signals"), high-speed counting ("frequency of clock signal"), and a second group command (see page 2 [0038], "processing a large load").

As per claim 2, the Tokunaga reference discloses the second processing unit ("high speed processor 1") includes a basic command executing command (see page 5 [0068], "memory 2") for executing the second group command ("processing a large load").

As per claim 4, the Tokunaga reference discloses the second processing unit ("high speed processor 1") includes a pulse output module (see page 3 [0044], "switching section 81a") for output a plurality of high-speed pulse signals ("high speed clock signal").

As per claim 6, the Tokunaga reference discloses the second processing unit ("high speed processor 1") contains an interrupt module (see page 3 [0050], "activation control means 8") for outputting interrupt signals ("interruption signal").

As per claim 8, the Tokunaga reference discloses the second processing unit ("high speed processor 1") contains a counting module (see page 3 [0041], "high speed bus 3") for executing a plurality of high-speed counting modes ("high speed processing").

Allowable Subject Matter

12. Claims 3, 5, 7 and 9-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references are cited to further show the state of the art with respect to programmable logic controllers in general:

USPN 6,130,603 to Briechle

USPN 5,163,146 to Antanaitis, Jr. et al.

US Pub. No. 2002/0143410 A1 to Yance et al.

JPPN 4-220824 A to NARITA

JPPN 1-232848 A to USU

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Crystal J. Barnes whose telephone number is

571.272.3679. The examiner can normally be reached on Monday-Friday alternate Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on 571.272.3687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Crystal J Barnes

CJB
15 April 2005